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Forest Development Research

PROGRAM

Manning Diversified Forest Products
Research Trust Fund
MDFP 13/96
Beaverhill Bird Observatory
Neotropical Bird Monitoring 1997/98

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Beaverhill Bird Observatory
Neotropical Bird Monitoring 1997/98

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By Petra A. Rowell and Christine Rice
Beaverhill Bird Observatory Society
Tofield, Alberta
Canada

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- Disclaimer -

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Abstract

The Beaverhill Bird Observatory is a not-for-profit, volunteer organization that has been banding and censusing birds in Alberta since the early 1980's. In recent years, efforts of a number of local volunteers in Lesser Slave Lake and Calgary have given rise to two similar organizations - the Lesser Slave Lake Bird Observatory and the Calgary Bird Banding Society. Together, these three organizations are working to create a long-term, comprehensive migration monitoring project that effectively measures changes in bird populations across the province, with particular focus on neotropical migrants that breed in the Boreal Forest.

In 1997, over 5300 birds were fitted with U.S. Fish & Wildlife aluminum bands at the three stations. Overall numbers banded were very similar to those in 1996, although each observatory encountered new species and documented record highs for others. New data was collected on some boreal and more northern breeding birds as constant banding efforts continued into the fall season later than ever before.

Plans are already underway for 1997. All three stations will be running the same protocol as in 1996. As well, Alberta will be working with Bird Studies Canada and other provinces to develop a database that can be used to make comparisons between these stations and others in the migration monitoring network across Canada.

Acknowledgements

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Introduction

The Beaverhill Bird Observatory Society is a not-for-profit, volunteer organization that has conducted numerous studies entailing songbird inventories and migratory bird monitoring throughout Alberta since the early 1980's. Studies conducted at Beaverhill Lake (near Tofield Alberta) include daily census counts, bird banding, nest-site banding, recording nesting sites for the Prairie Nest Record Scheme and MAPS (Monitoring Avian Productivity and Survivorship Project), to name just a few. A raptor migration monitoring program and the Alberta Amphibian and Reptile Monitoring Program were also initiated at the BBO during the 1997 season.

Since the early 1990's, the Lesser Slave Lake Bird Observatory and the Calgary Bird Banding Society (working in the Inglewood Bird Sanctuary) have also been conducting similar songbird inventory and migration work. All three stations belong to a network of migration monitoring sites across Canada, led by efforts of Ontario's long established Long Point Bird Observatory and the recently formed Bird Studies Canada.

Boreal Connection

Several recent publications using data from radar printouts and bird banding studies suggests there has been population declines of up to fifty percent in several species of songbirds since the late 1960's (Thomas 1994, Smithsonian Migratory Bird Centre 1991). There has been much speculation over the cause of these declines, including the loss of tropical rain forests, boreal forest fragmentation, pollution, etc.. Yet in many areas, there is little baseline or current trend data to draw from.

In the past, bird banding and census counts have been used to locate major migratory routes and wintering grounds of the many migratory songbirds that fly up the Mississippi River valley in the spring, then fan out westward to the great boreal forests for the summer. Today, Alberta's three observatories are well positioned to monitor this migration through the province, using the data to make annual comparisons of population numbers and species compositions. This information will aid in assessing or predicting the effects of management activities (ie. forestry, oil & gas, etc.) on bird communities (Verner 1981). Since avian territories encompass numerous other wildlife species the knowledge gained from bird studies such as this one will benefit a wide range of boreal flora and fauna.

Objectives

The objectives of this study are:

1. To provide comprehensive migration monitoring in Alberta of neotropical migrants for a 5 year period, 1996 - 2000.

2. To provide visitor services programs aimed at interpretation and a call to action for individuals interested in conserving neotropical songbirds.

3. To publish and make available findings, results and recommendations to interested individuals, national and international research organizations and provincial and federal authorities.

Methods

All three Alberta Monitoring stations run similar studies each season. Station protocols are on hand at each site in lab manuals that outline specific requirements for each project. Many of these protocols have been used and approved by Canada's oldest banding station at Long Point Bird Observatory and by banding technical committees that draw on experts from all over North America. A combination of hired or contracted staff and volunteers work from late April through to late October to conduct bird banding and daily migration monitoring counts. A typical day starts at sunrise when 12-15 songbird mist nets are set up.

Each bird caught is extricated from the net then put through a series of measurements to determine age and sex and rated on factors such as feather wear, and fat content. Data is recorded on standardized sheets, then entered onto computer disc for inclusion in the Environment Canada Bird Banding data bank - a part of the U.S. Fish and Wildlife banding data bank. The number of birds banded, divided by banding effort, provides useful numbers for yearly comparison. As well, retraps (birds netted but already banded at the same location) and recoveries (banded birds found at a location other than where they were banded) also provide interesting data on site fidelity and species longevity.

To supplement banding data, a census route is travelled 2-4 times a day whereby all visible and audible birds are recorded. Five to six thousand birds are banded at the observatories each year; tens of thousands of birds are observed each year. When and where possible, all 3 stations also take part in special fundraising events, interpretive programs, and bander training workshops.

Results

In 1997, 5338 birds of 85 species were banded by Alberta's 3 observatories (Table 1). This number includes a good variety of flycatchers, thrushes, warblers and sparrows. Overall numbers caught were similar to 1996 totals, although each observatory encountered new species and documented record highs for others. At the BBO, fall banding activities were extended until October 30, and never before has the observatory collected consistent data this late into the season. New information on the timing and numbers of some boreal and more northern breeding birds was collected. This is a valuable addition to our baseline data.

A number of events were also held over the summer. The BBO led a number of field trips in conjunction with the Tofield Snow Goose Festival April 26-27, college classes, The Edmonton Bird Club and other local natural history clubs. Similarly, LSLBO participated in the Lesser Slave Lake Songbird Festival. All three organizations participated in the 1996 Baillie Birdathon, a major fund raiser for bird research across Canada.

Public awareness of our banding activities and project importance was greatly increased when the BBO was featured in an episode of "The Bird Guy" on the cable Life Network. Posters explaining the methods and importance of our research were also presented at the Manning Diversified Forestry Products conference. In general, roughly 1,000 visitors visited one of these sites in 1996, hailing from as far as the NWT, Great Britain and Japan.

Discussion/Conclusion

Despite dire warnings of declines, little baseline data on bird populations has been collected in Alberta in the past. Avian populations are an integral part of our Boreal Forest and must be maintained. Long-term monitoring and trend analysis must be put into place now so knowledgable management decisions may be made. Recording annual variations in populations is the first step to understanding the causes of such variation. To date, the Alberta Neotropical Bird Monitoring Project has been, and will continue to be, successful in collecting such data.

Literature Cited

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Smithsonian Migratory Bird Centre, 1991. Birds Over Troubled Forests. Smithsonian Institute, Washington.

Verder, J., 1981. *Measuring Responses of Avian Communities to Habitat Manipulation.* Studies in Avian Biology No. 6: 543-547.

Table 1: 1997 Banding Totals from Beaverhill Bird Observatory (BBO), Lesser Slave Lake Bird Observatory (LSLBO), and Calgary Bird Banding Society (CBBS)

SPECIES	#	SPECIES	#	SPECIES	#
1. Solitary Sandpiper	13	30. Hermit Thrush	25	59. Cape May Warbler	11
2. Spotted Sandpiper	3	31. Gray-cheeked Thrush	1	60. Canada Warbler	119
3. Sharp-shinned Hawk	23	32. Veery	1	61. Yell.-rumped Warbler	744
4. Cooper's Hawk	2	33. American Robin	92	62.Yellow Warbler	529
5. Belted Kingfisher	6	34. Varied Thrush	1	63. Tennessee Warbler	244
6. Hairy Woodpecker	3	35. Swainson's Thrush	121	64. MacGillivray's Warbler	13
7. Downy Woodpecker	10	36. Gray Catbird	10	65.Rose-breasted Grosbeak	8
8.Yell.-bellied Sapsucker	5	37. Brown Thrasher	3	66. Clay-coloured Sparrow	226
9. Northern Flicker	9	38. Cedar Waxwing	71	67. Savannah Sparrow	12
10. Eastern Kingbird	17	39. Philadelphia Vireo	7	68. Lincoln's Sparrow	69
11. Alder Flycatcher	132	40. Warbling Vireo	56	69. Song Sparrow	28
12. Least Flycatcher	395	41. Solitary Vireo	4	70. Vesper Sparrow	1
13.Yell.-bellied Flycatcher	4	42. Red-eyed Vireo	60	71. Dark-eyed Junco	53
14. Traill's Flycatcher	51	43. Orange-crowned W.	224	72.American Tree Sparrow	53
15. Willow Flycatcher	1	44. Chestnut-sidedWarbler	1	73. Harris Sparrow	1
16. Olive-sided Flycatcher	5	45. Palm Warbler	23	74. Chipping Sparrow	206
17. Eastern Phoebe	4	46. Magnolia Warbler	49	75. Wh.-crowned Sparrow	50
18. Western Wood-Pewee	36	47. Mourning Warbler	65	76.White-throated Sparrow	158
19. Tree Swallow	106	48. Black-&-white Warbler	50	77. Swamp Sparrow	1
20. N. Rough-winged Sw.	2	49. Connecticut Warbler	6	78. Lapland Longspur	1
21. Barn Swallow	10	50. Nashville Warbler	3	79.Brown-headed Cowbird	25
22. Black-billed Magpie	8	51. Common Yellowthroat	51	80. Red-winged Blackbird	3
23.Bl.-capped Chickadee	93	52.Black-throated-green W	2	81. Baltimore Oriole	20
24. Red-breasted Nuthatch	9	53. Northern Waterthrush	84	82. Western Tanager	6
25. Wh.-breasted Nuthatch	5	54. Ovenbird	40	83. American Goldfinch	19
26. House Wren	112	55. American Redstart	330	84. Pine Siskin	14
27. Ruby-crowned Kinglet	46	56. Wilson's Warbler	170	85. Purple Finch	8
28. Golden-cr. Kinglet	9	57. Townsend's Warbler	4		
29. Mountain Bluebird	1	58. Blackpoll Warbler	42	**TOTAL**	**5338**

Table 2: Budget Estimates

Funds Applied For:	BBO	CBBS	LSLBO	TOTAL
STEP/SEED	6,000		6,000	12,000
Canadian Wildlife Service	4,000	2,000	4,000	10,000
Manning Div. Forest. Fund	4,000	2,000	4,000	10,000
Baillie Birdathon	1,500	2,500	500	4,500
TOTAL	15,500	6,500	14,500	36,500
Funds Required For:				
Salaries & Wages(# staff)	13,000(2)		13,000(2)	30,500
Equipment	2,500	2,000	1,500	6,000
Materials & Supplies				
Travel, Accom. & Meals		4,500		
Subcontracts				
Other				
TOTAL	15,500	6,500	14,500	36,500

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